P. Wright, S. Belt, D. Pham, S. Dimov, D. DeRoure. Cognitive support for older people from multimedia options. Gerontechnology 2008; 7(2):241. Diversity increases with age, so this study investigated whether providing older users of multimedia displays with simple presentation options would result in people choosing display combinations that supported their performance. It is known that older people may be less inclined than younger people to change the setting of a display (e.g. to turn a voice on)[1]. Nevertheless when tasks involve following instructions displayed by computer, older people's multimedia choices do vary[2]. To gauge what might be appropriate cognitive support for a specific individual, three short online tasks measured perceptual and cognitive abilities. The relation was then examined between performance on these measures and people's multimedia choices in the main task which involved answering questions about a route on a map. Of particular interest was whether the audio option would be found helpful by those with cognitive limitations or only by those with visual challenges. **Methods** 50 paid volunteers (mean age 67.2, range 59-81) used a touch-screen display to answer multiple-choice questions about a road route between two locations in the UK which was shown above the question. By tapping buttons on the screen, people selected whether they worked with the map alone, a map plus an auditory description of the route, a map plus a written description of the route which was identical to the auditory information and shown just below the map, or all three information sources: map + written text + spoken text. People answered questions about 16 routes, continuing at their own pace with ample time to change their mind about the way information was presented. Before doing this task they did three short tasks on the same touch-screen: (i) *Visual Search*: they located a target name in a displayed phone list and tapped the phone number into an onscreen keypad; (ii) *Verbal Short Term Memory*: they listened to an audio digit string from the computer and then tapped this digit sequence into a row of buttons at the foot of the screen; (c) *Spatial Working Memory*: they viewed a graphic sequence in which a square of paper was folded several times and pierced by a pin, then selected which of five graphics depicted the unfolded paper. **Results and discussion** In the routes task, most people retained their chosen multimedia combination throughout the 16 trials and so could be classified by this choice. Table 1 summarises these multimedia choices, and shows the diversity among these volunteers. Although the group who chose map+audio had the lowest score on Visual Search, as might be expected, this was not the case for those choosing map+audio+text. Rather, it was people with the lowest Spatial Working Memory scores who were most likely to select audio. Evidence that accuracy tended to be higher when choices included text is open to several interpretations. Nevertheless, these data patterns support the suggestion that older people are often aware of specific cognitive limitations and will make appropriate selections among multimedia options when these are readily available.

References

1. Wright P. Gerontechnology 2006;4:187-189
2. Soroka A, Wright P, Belt S, Pham DT, Dimov S, DeRoure D, Petrie H. Proceedings of IEEE Industrial Informatics conference; 2006; pp 411-416.

Table 1 Multimedia choices and performance

| | Presentation Choice | | | |
	Map only	Map+Audio	Map+Text	Map+Audio+Text
N	15	10	10	8
Age	67.2	69.0	67.7	64.6
Routes Accuracy (SD)	11.4 (2.4)	11.7 (1.6)	14.0 (1.6)	14.0 (2.2)
Cognitive Measures				
Visual search	7.4	6.3	7.9	7.7
Auditory STM	4.9	4.3	4.0	4.9
Spatial WM	3.1	1.6	2.9	1.9